



# UdaPeople CI/CD Product Development Project

Create, Integrate and Deploy

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# Agenda

- ▶ Introduction to CI/CD
- ▶ CI/CD Workflows
- ▶ Benefits of CI/CD

# Introduction

- ▶ **Continuous Integration** is the practice of merging all developers working copies to a shared main line several times a day.
- ▶ **Continuous Delivery** is an engineering paradigm in which teams produce and release value in short cycles.
- ▶ **Continuous Deployment** is software engineering approach in which value is delivered frequently through automated deployments.

# CI/CD Workflows

## Continuous Integration

Build

Test

Analyze

Continuous integration is about source code:

- ☐ Compile
- ☐ Transpile
- ☐ Lint
- ☐ Unit Tests
- ☐ Vulnerability Test
- ☐ Static Analysis

## Continuous Deployment

Deploy

Verify

Promote

Continuous deployment is about deployment:

- ☐ Create infrastructure
- ☐ Provision servers
- ☐ Copy files
- ☐ Promote to production
- ☐ Smoke Test
- ☐ Rollback

# Benefits of CI/CD

## Continuous Integration

- ▶ Catch compile errors:
  - ❑ Reduce cost through developer time on fixing issues
- ▶ Catch unit test failures:
  - ❑ Avoid cost through less bugs in production
- ▶ Detect security vulnerabilities:
  - ❑ Avoid cost through preventing costly security holes

## Continuous Deployment

- ▶ Automate infrastructure creation:
  - ❑ Avoid cost due to less human errors
- ▶ Frequent production deployments:
  - ❑ Increase revenue through faster features deployment
- ▶ Automated smoke test:
  - ❑ Protect revenue through reduced downtime
- ▶ Automated rollback:
  - ❑ Protect revenue due to quick undo process